

MENLO PARK C.D. RADIO CLUB, K6YQT

PAARA

GRAPHS

vol. 26

DEC. 1983



palo alto AMATEUR RADIO ASSN.



Station of the Month - CAM PIERCE, K6RU

PAARAGRAPHS is the official organ of
the Palo Alto Amateur Radio Association &
the Menlo Park Civil Defence Radio Club.

1983 CLUB OFFICERS

President	:	Gerry Tucker	WA6LNV	326-4908
Vice-President	:	Clif Keely	KA6JWA	364-4968
Secretary	:	Gerry Wagstaffe	W6NIR	325-4670
Treasurer	:	George Nixon	GI3OEN	854-6445
Trustee, K6OTX	:	Fred Canham	K6YT	948-9238
Property	:	Ed Fairbanks	W6AIN	322-0319
Co-Property	:	Fred Canham	K6YT	948-9238
Refreshments	:	Frank Chandler	WB6QPV	322-7678
ARES Officer	:	Steve Stuntz	K6PS	322-4952
Club Historian	:	Jerry Zobel	W6ARA	322-0063
Badges	:	Fred Canham	K6YT	948-9238
Field Day-gen'l	:	Fred Canham	K6YT	948-9238
Field Day-CW	:	Cam Pierce	K6RU	854-3055
Field Day-phone	:	Bob Wheeler	K6SEM	
Club Nets	:	147.45 MHZ, Monday 8:30 pm L.T. & 14.287 MHZ, Monday 9:00 pm L.T.		

BOARD OF DIRECTORS

Chairman	:	Gerry Tucker	WA6LNV
Members	:	Ed Fairbanks	W6AIN
	:	Kevin Lapp	WA6FAC
	:	Wally Porter	K6URO
	:	Bill McElhinney	KA6LZI
	:	John Monocore	KD6ZL
	:	Les Vickery	W6AKR
	:	Alan Larsen	WA6AZP
	:	Jack McEnnerney	W6LII

PAARAGRAPHS STAFF

Editor	:	George Nixon	GI3OEN
Advertising	:	Swede Swenson	K6CHL
Mailing	:	Bill McElhinney	KA6LZI

PAARA POLICIES

Membership in PAARA is \$6.00 per calendar year (payable in January), which membership includes a subscription to PAARAGRAPHS. Freebee distribution to those who indicate an interest in the Club, and as an inducement to their becoming members, and is subject to change with changing interests in the Club. Make payment to: PAARA, P.O. Box 911, Menlo Park, CA 94025.

Written contributions to the P.O. Box above, or to the Editor, 1140 Sherman Avenue, Menlo Park, CA 94025, tel. no. 854-6445. Deadline is two or three days after the Board of Directors meeting.

-3-

Friday, December 2, 1983

7:30pm

R E G U L A R M E E T I N G



A MYSTERY TOPIC
by
A MYSTERY SPEAKER

Who is the gentleman above? An early member of the National Rifle Association, perhaps, or is he the December speaker? Come to the meeting and find out who Clif Keely (KA6JWA) gets for speaker.

Meeting to be held at the Menlo Park Recreation Centre, Alma at Mielke, Menlo Park. Future meetings: January 6, 1984; February 3, 1984.

Mark your calendar for the PAARA Christmas Dinner on 12/12/83 at Rick's Swiss Chalet.

Circle the Date

December 2, 1983

CHRISTMAS & HANUKKAH DINNER

at

Rick's Swiss Chalet
4085 El Camino Way, Palo Alto

on

Monday, 12th December, 1983

Roast Cross Rib^of Beef \$9.75

Breast of Chicken Cordon Bleu \$9.75

(price includes tax and tip)

There will be a YL, XYL, and OM
gift exchange, so bring something
of about \$2.00 in value.

PRESIDENT'S CORNER: December is here. The weather is gloomy but spirits are high. We shouldn't have any problems this month as long as we keep our linears off during the football games. Speaking of transmitter power, my thanks to Dale, W6STY, for providing us with a talk at the last meeting. His suggestion for overdriven front ends is to put a 300 ohm resistor across the antenna terminals and nothing else! Of course, the value is $\sqrt{L/C}$ and it's only required at levels above 10 volts/metre!

Get your money to George Nixon, GI30EN, by the next meeting for the Christmas party.

The moving finger writes, and, having writ, moves on, but a ham clings to his band forever. (Is that the collective wisdom of three years as PAARA President?) If I said I enjoyed it, would that prevent me from saying that I had plenty of headaches? In any case, I want to thank all of you for the privilege of being your leader through thick and thin, speeches, 599 reports, board meetings, auctions, PAARAGraphs deadlines, etc. I'm a different, better, person for it, and I have many fond memories of my day in the barrel. Uncounted years as your Secretary and the past three years as your President have, I hope, earned me the chance to take a short breather. I wish the new officers good luck and I hope that PAARA members continue to give the officers advice and support.

de Gerry Tucker, WA6LNV.

HAPPENINGS WITH EXPLORER POST #599:

I know it has been a while since any of you have heard from the Post; however, we are still around and fairly active. In the last nine months, the Post has sponsored and actively participated in three hidden transmitter hunts. The most recent of these was on Sunday the 30th of October. Only three groups participated, and all were Post 599 members. This has usually been the case in our "Fox Hunts", and it has been a disappointment to me as I would like to see more PAARA members become involved. We have

made it a point to announce all events on PAARA nets and at meetings. We will continue to do this so as to give any and all members time to prepare their equipment and strategies. So listen closely for up-coming Post attractions.

At the present time, I don't have a set date for the next transmitter hunt; I am awaiting a decision from last month's winning group, who will become the "FOX" next time. Just in case you are wondering, those winners were: Chris, WB6WBK; Mark, KA6RMA; and Alan, WA6AZP. The other participants were: Paul, N6FEG, and Gary, WB6WNI, as a team, with a most interesting antenna arrangement; and Rob, KA6NAN, who used a "double ducky" arrangement. The operators of the hidden transmitter were: Gary, KK7H; John, K6PKT; and yours truly, John, KD6ZL.

Well, that's all I have for you this month, so until next time,

73 de John Buonocore, KD6ZL.

(Ed.: Thanks for the fine article, John.)

599 NEWS

★ HIDDEN TRANSMITTER HUNT: October 29 brought another in the series of 599/PAARA hidden transmitter hunts. This time the hidden transmitter was found in less than one hour, with the two teams arriving within minutes of each other. Paul (N6FEG) had an elaborate mechanical setup to aid in finding the "hidden" transmitter. The Chris/Alan (WB6WBK/WA6AZP) team is rumoured to be brewing

up an exotic digital circuit for future hunts. Will future hunts turn into a battle of modern technology versus tried and true techniques???

(Ed.: Megagodzilla versus King Kong!)

450 MHZ REPEATER WORK: A new power supply has been installed; it features power fail backup. The cabling has been overhauled. The new transmitter and receiver are now on the air on the new frequency. The 6-metre antenna has been mounted, but it is up to the reader to guess what it is for!

OTHER: Ken Dueker (KB6BPM) is active on 40 metres, and is interested in trying some contests. He is presently doing about 8-10 wpm. Any information on upcoming contests appropriate for novices will be appreciated. See him at the meeting to set up schedules, or see Rob, KA6NAN, about contacting him by phone.

(Ed.: The above manuscript was delivered unsigned, but I believe that I recognise the computor printer of Alan Larsen, WA6AZP.

NOMINATIONS FOR OFFICE.

President: Dave Daniels, KB6WP

Vice-President: Clif Keely, KA6JWA

Secretary: Alan Larsen, WA6AZP

Treasurer: Jack McEnnerney, W6LII

Board of Directors: Gerry Tucker, WA6LNV

Andy Anderson, K6EHS

Ron Panton, W6VVG

Editor of PAARAGraphs: George Nixon, GI3OEN

This is the report of the Nominating Committee, Jerry Zobel, W6ARA, Chairman.

LETTER from Jack Burnett, Executive Editor, Wayne Green Inc., 73 Amateur Radio's Technical Journal, Peterborough, New Hampshire 03458.

Dear Sirs:

I am writing to let members of your organization know about an employment opportunity which currently exists at 73.

The position of TECHNICAL/INTERNATIONAL EDITOR requires excellent writing and oral communications skills, as well as a General-class or higher ticket. Experience with microcomputers would be a help. Responsibilities include participating in manuscript review, organizing and implementing special projects, and supervising our staff of foreign correspondents.

We offer a very competitive salary and benefits package and excellent, informal working conditions. As you may know, Peterborough is located 75 miles from Boston in the beautiful Monadnock region of New Hampshire - a state with no sales or income tax.

Of course, we are an equal opportunity employer. If you know of anyone who may be interested in this position, I would appreciate it if you would have them contact me by mail at their earliest convenience. Thank you very much for your help.

Sincerely, Jack Burnett.

(Ed.: Well, Jack, I would say, off-hand that our best writer is Rick Ferranti, WA6NCX, former PAARAGraphs Editor. See the next letter and article.)

LETTER from Rick Ferranti, WA6NCX.

Dear George,

..... You might mention in PAARAGraphs that I'm active on 160 thru 3/4 metres now with wire antennas and even (occasionally) successfully have contacted PAARA members (e.g. WB6WNI). My thesis work is coming along well and I'm planning to graduate in June '84 ----- I had better, since my prospective employers expect me to. I'd appreciate anyone dropping me a line about trying a sked on the weekends. Also, please note my new address below for your files.....

Sincerely, Rick Ferranti, WA6NCX
116 Franklin St.
Arlington, MA 02174
tel. 617 646-6343

PANADAPTOR IDEAS FOR YOUR TS-430S
OR OTHER RIG
by
Rick Ferranti, WA6NCX/1

Ever since I got my Kenwood TS-430S last June, I have wanted to use it with the pan-adaptor I built for the old FT-101B (described in February 1983 Ham Radio magazine). There are two main problems with the 430-to-

panadaptor marriage: no i-f output on the TS-430, and the i-f frequency on the Kenwood is at 48MHZ, not 3MHZ as in the Yaesu.

To solve the first problem, I built the 2-stage buffer shown on the diagram. I tapped the i-f of the 430 at 48MHZ right after the first mixer (and before the first crystal filter - this is the widest bandwidth part of the receiver, which is what you want for a wide-sweep panadaptor). However, I didn't want any circuit loading or other ill effect to degrade the phenomenal performance of the 430 receiver - hence the buffer circuit of Figure A with its very high input impedance.

The circuit is built on a little $\frac{1}{2}$ " by $\frac{1}{2}$ " scrap of copper-clad board (just solder the thing together with short leads and use the board as the groundplane); I placed it in the 430 in the space between D52 and J12 on the RF board. Insulate the buffer board if necessary to prevent shorts. The tap point I chose was at the end of C79 nearest the rear of the radio (the output of T4 just after the mixer). You can wick up the solder cut of the C79 pc land and snake a pre-stripped length of #30 enamel wire in with C79's lead, then resolder. Keep the #30 wire length short - and all lengths short - up to the gate of the FET on the buffer board. Of course, you have to remove the TS-430's rf board for this operation, but it just unplugs with molex-type connectors and cute coaxial plugs.

The power connection for the buffer goes to switched +8V which is available at the top of L65 (next to T4) - just tack a wire to the exposed lead. The output of the buffer

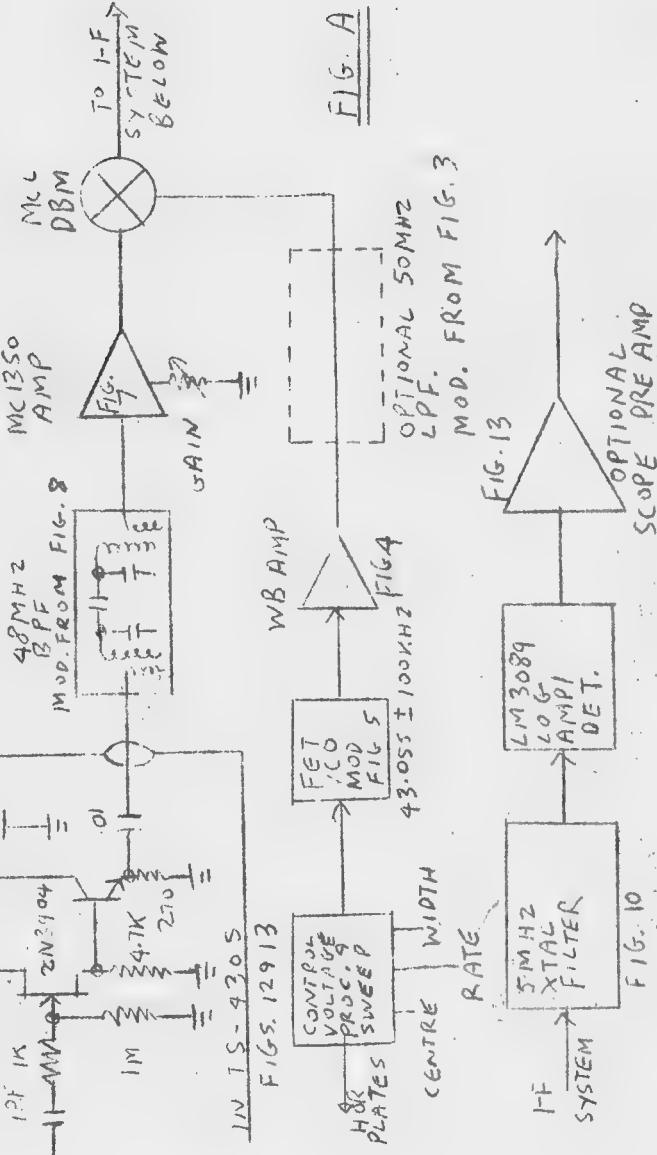
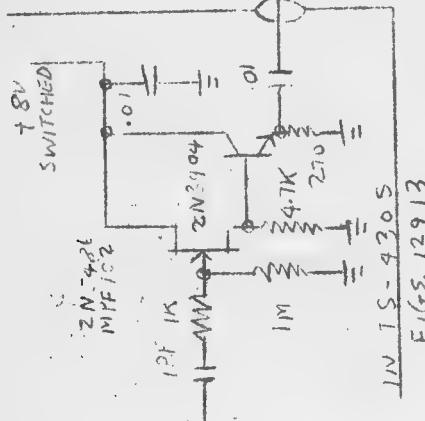
goes through a length of RG-174/U mini coax to the unused terminal 3 and the shell (ground) of the ACC socket on the rear panel. No holes need be drilled in the 430. You can get easy access to this socket by unscrewing the final amp/filter section at the rear of the radio and swinging it down on its nice hinges.

The buffer does not load the receiver at all, no matter what you hang on the end of the coax output. With this i-f tap at 48.0555 MHZ you can now add a single conversion panadaptor as in the rest of Figure A, much simplified from the dual-conversion system from the dual-conversion system for the FT-101. The figure numbers correspond to the circuit blocks in the original Ham Radio article. You'll need to modify a few tuned circuits but the results are quite worth while - 300 HZ resolution and wide dynamic range give you a real visual aid to signal and band conditions across the spectrum.

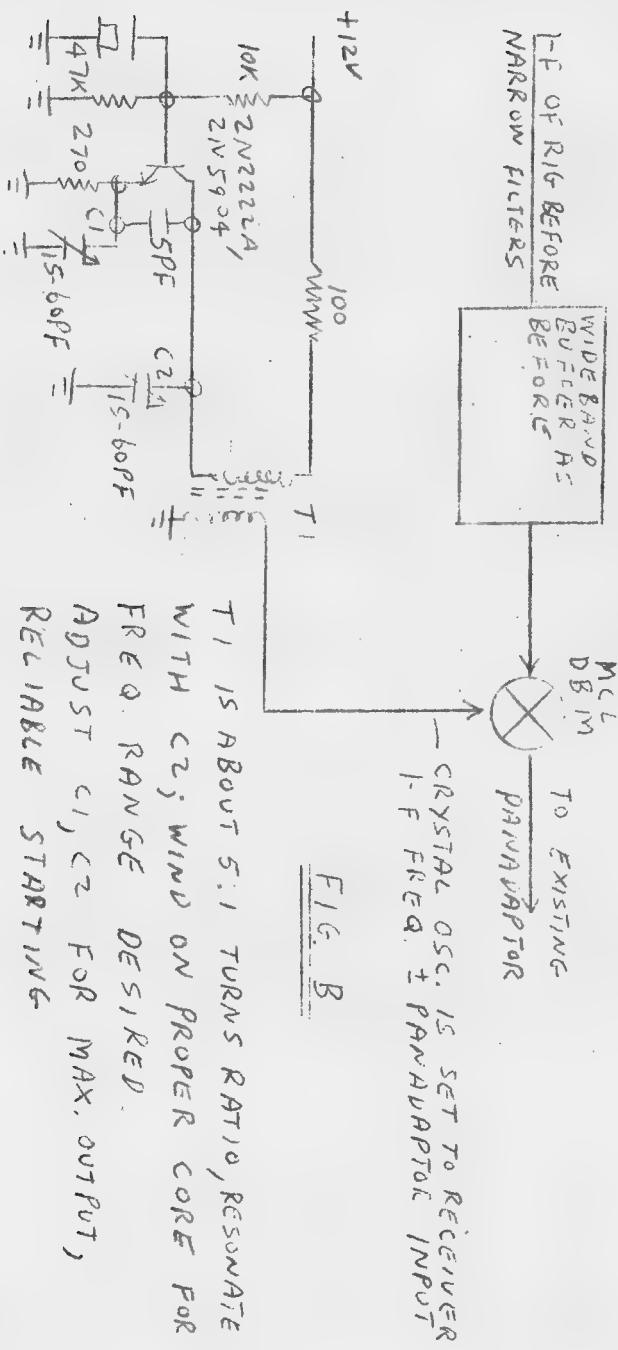
If you already have an old clunky panadaptor (a BC-1031 or SP-44) or even a later model and want to use it with any receiver, the circuit in Figure B is a buffer-converter system to translate the receiver's i-f to the input range of the panadaptor. The buffer is the same as in Figure A; again the tap point goes to the output of the first receiver mixer before any significant selectivity is introduced. You'll have to choose the crystal for the correct frequency translation, which includes getting the correct sideband out of the mixer so that the screen will show lower frequencies on the left and higher ones on the right. And by the way, you could get better resolution

TS-430S PANADAPTER

(FIG. #'S FROM HAM RADIO
FIG. B, 1983 P. 26-38)



PANADAPTOR ADAPTOR
(FOR ANY RIG WITH ANY PANADAPTOR)



with the nominally broad BC-1031/SP44 by adding a crystal i-f filter as in Figure 10 of the Ham Radio article. I haven't tried the circuit with low frequency crystals (262 KHZ was used in the BC-1031 i-f) but it should work. The filter would go in series with the i-f chain in the panadaptor, right after its mixer.

Panadaptors are fascinating devices to watch and help you catch new signals or avoid clobbering existing ones. With these circuit ideas, you'll be able to add a visual dimension to your listening, and increase your fun of tuning around the bands.

P.S. Check Ham Radio October 1983 page 70 for some minor corrections to the original panadaptor article.

CONTEST FOR AMPEX OLD-TIMERS:

A valuable prize from your Editor's junk box will go to the best article received for publication in PAARAGraphs describing the circumstances under which the photograph on the next page was taken. The three principal people in the photograph must be identified.

STATION OF THE MONTH:

Cameron (Cam) Pierce, K6RU
(article by your Editor)

Oakland Naval Reserve airbase - 1936. A J2F Grumman amphibian taxied down the runway. On board were a pilot and three reservists,



one of them Cam Pierce, reservist radioman, on his first flight. The pilot was unfamiliar with the plane, he adjusted the trim control wrongly, the plane's nose dipped, the plane crashed and it flipped over onto its back. The pilot and one reservist died on the spot, the wings and motor caught fire, and reservist radioman Cam Pierce hung upside down in his seat, trapped by the radio which had come out of the panel into his lap. For thirty seconds, Cam struggled to reach the seat belt latch under the radio in his lap while the plane burned towards him; then, after releasing the seatbelt, he wriggled out through the gap between the shattered cockpit cover and the ground. By this time, the crash team had arrived on the scene, and they cut open the fuselage to release the other surviving reservist, trapped within. Cam escaped with some burns and a lot of bruises.

A year earlier, in 1935, Cam Pierce, still a high school student, operated ham station W6HJT from his bedroom in his parent's house at the top of the hill in Hillsborough, California. Cam's big ambition in ham radio had been, since first licenced in 1932, to score high in the Nationwide Sweepstakes contest. Cam was not too sure what that took, but luck was with him in that school hours were shortened to 1:00pm to 5:00pm during the eight-day contest due to rebuilding at the school. When QST came, Cam was amazed and elated to read that he had come third in the U.S.A. in the contest.

Cam had made 448 QSO's in eight days; his station at the time was a crystal controlled transmitter using 210's, a Hammarlund Atomic

Pro superhet receiver, and two Zepp antennas.

In the years to come, Cam became famous in ham radio, and a partial list of his achievements follows:

1936-41 Cam won the Santa Clara Valley section of Sweepstakes each year.

1941 With Mike Villard, W6QYT, Cam restarted the Stanford University Radio Club, built a building for it, and built the antenna, transmitter and power supply.

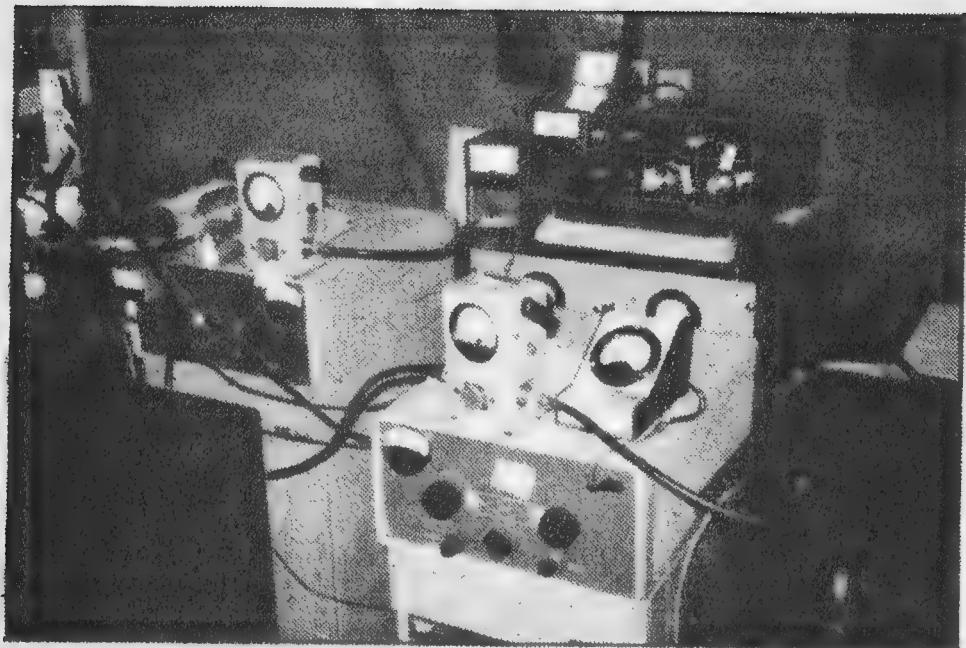
1941-45 Cam worked as a project engineer on radars, designing the first portable 400MHZ search radar (it used 53A tubes).

1960 Cam bought a ranch near San Diego and built the famous 5 element, 100' boom, 40 metre beam, which he mounted on a 112' Telrex Big Bertha tower. His other antennas were mounted on six 105' telephone poles specially ordered from Oregon. Cam had to arrange the route details with the California Highway Patrol due to the length of the poles.

1965 Cam scored 4th in the CQ Worldwide CW contest and 1st in the All-Asian DX contest.

1969 Cam was Field Day chairman for the Pacifico Club, K6BAG, in Southern California. The club made over 2,000 QSO's, the second highest number ever made up to that time in Field Day.

1976 Cam became the Field Day CW captain



Some of Cam Pierce's equipment.

of the Palo Alto Amateur Radio Association, and, with Fred Canham, K6YT, and Bob Wheeler, K6SEM, forged a Field Day team that was to dominate class 4A for years.

Cam Pierce is a native Californian; both of his parents were Californians, and two of his grandparents were Californians, the other two grandparents being Scottish, from Glasgow (the Camerons). Cam is proud of his Scottish heritage, and the Cameron Clan is a famous clan, of course. The Clan has not one but two military regiments named after it: the 79th or Cameron Highlanders, and the Cameronians or Scottish Rifles. The Clan motto has become part of the English language; it is: "For King and Country".

Cam Pierce lives with his wife of forty-five

years, Doris, in a ranch-style house in the suburb of Ladera. At the back of his house, at the end of his back garden, the ground falls away rapidly in the Great Circle direction of Europe. The station is in a front room, originally a bedroom, but now a den. It is a pleasantly-paneled room, with radio stations on each of several modern walnut desks (Cam nowadays often enters contests in the multi-station classes). On the walls are the memorabilia of a long and successful life in ham radio, in engineering and in business. There are numerous ham radio certificates, there are portraits of Doris and the children, there are fishing photographs and a stuffed Mahi Mahi fish (the first one Cam caught) and there is an autographed letter from Walt Disney. Incidentally, in Cam's living room, there is another stuffed fish, an impressively huge 575 lb. marlin caught off the shore of Kona, Hawaii in 1965.

Cam Pierce's station consists of:

10m	a 5 element, 27' boom, on a 45' mast
15m	a 5 element, 36' boom, on a 55' mast
20m	a 4 element, 40' boom, on a 60' mast
40m	a 3 element, 32' boom, on a 50' mast
80m	a $\frac{1}{2}$ -wave sloper
160m	a 160' L-antenna, with 30' radials

amplifiers:

a Henry 2KZ with a pair of 3-400Z's
a Henry 2KD5 with a pair of 3'500Z's
a HB with a 3-1000Z
An Alpha 76 PA with 3-8874's
a Clipperton L with 4-572's

radios:



Bob Wheeler, K6SEM

Bob Hill, W1ARR

Cam Pierce, K6RU

(the above photo shows contest time at K6RU)

two TS-830's with 230 VFO's
a Collins S-line 75S3B-32S3
a R820
A Collins 75S3C

Other:

5 wattmeters
a CK1 keyer



John Buonocore, KD6ZL

Alan Brubaker, K6XO

In construction, Cam Pierce's main interest is antennas. Cam has made many of his own antennas, and for the Palo Alto Amateur Radio Association Field Day effort, Cam has made the following:

- 2 wide-spaced 3 element 20m Yagis
- 2 wide-spaced 4 element 15m Yagis
- 1 wide-spaced 5 element 10m Yagi
- 1 wide-spaced 4 element 10m Yagi
- a modified KLM 3 element 40m Yagi

and a 2 element Delta loop for 80m.

As to the future of the Palo Alto Amateur Radio Association's Field Day effort, Cam Pierce notes that the worsening ionospheric conditions will favour stations in the high-population density corridor from Boston thru to Washington on the East Coast. On teaching contesting to the younger, up-and-coming members of P.A.A.R.A., Cam notes that the Northern California Contest Club, each week, as part of their net, once had a 5 to 10 minute simulated contest session in which members would work each other as if in a contest, an idea that could be copied.

Erv Rasmussen, W6YPM
(Jan. 3, 1903 - Oct. 19, 1983)
by

Les Olson, W6CBI, with help from
Dr. Chuck Clemans, W9COG.

Fellow hams from around the country were saddened last month to learn of the death of our good friend and PAARA member, Erv Rasmussen, W6YPM.

Upon my arrival in California in 1948 and in a chance encounter on 75, Erv's first words to me were: "I used to talk to a kid bootlegger from your part of the country when we were both in Wisconsin." I responded, "I was that bootlegger." Erv had been one of my early contacts when I was a high school fledgling ham, (without benefit of licence), using a single O1A oscillator transmitter, and a regenerative O1A receiver, I worked the "Man About Town" from Oshkosh, Wisconsin.

From his many friends and fellow hams in "9" country, it is confirmed that he was the dashing young man who was licenced 9ECH in 1920 (before the prefix "W"). Much earlier, Erv, too, had been a bootlegger, using a loose-coupled Ford spark coil. In 1921, with a licence, he ran a .4 kw Thordarson spark and rotary-gap rig that was the envy of his fellow hams. In 1922, he had graduated to a pair of LV202's in a rig with which he worked Hawaiian, Cliff Dow, of 62AC fame.

Somewhere along the way, Erv's call was 9AMS, and later, it became W9FAV. In those early days, he worked in his father's paint contracting business, but soon he took a job as a sales representative for a Wisconsin paint company. It was during this period that he met and married his lovely wife, Marie.

In a very early QSO contest in 1930 (perhaps the first), a ham from Stanley, Wis., offered a smoked ham as a prize for the ham with the most Wisconsin contacts. Erv won the contest with about 15 contacts, and then shared the ham at a dinner in his home with all the contacts that could come.

Being the extrovert that he was, he made legions of friends all over the country, and he missed very few of the old Milwaukee A.R.C. WSO and stag parties, Milwaukee and Chicago conventions and related ham activities.

Erv moved to California about the beginning of World War 2, he taught CW to GI's as his contribution to the war effort, he

was relicensed W6YPM, and he became an executive of a paint company, first in San Jaes, then in Alhambra, and finally, in Redwood City. Erv was an early member of the QCWA and the ARRL, and many will recall the wonderful conventions with Erv and his hospitality suite.

Those with a penchant for the telephone patch will recall how Erv's corner of the surplus transformer market had him supplying transformers, with circuits, on a worldwide basis.

Erv had a vast collection of radio memorabilia that included all issues of QST, all issues of the Radio Amateur's Handbook, all issues of the Call Book, and volumes of other technical material. His collection of Call Books was nationally known, and many hams sought his help in determining their call letter issue date by its first appearance in the Call Books. His ham shack contained an extensive collection of old headphones, microphones, keys, tubes and other ham antiques.

Erv was a good friend to many, and an ardent supporter of ham radio. His friendly smile and good humour will be sorely missed, not only at club meetings, but also on the air.

PAARA DECEMBER 1983 ROSTER

Adachi, Dick	W6RVS
2 Coleman Place, Menlo Park, CA 94025	
Adams, Art	KA6POV
1801 Fulton St., Palo Alto, CA 94303	321-4886

5-STORE BUYING POWER!

SALE!

BT-ALPHA



MODEL	LIST	SALE
770X	\$5450	\$3775
78	\$3495	\$2480
374A	\$2595	\$1860
76A	\$1985	\$1440
76PA	\$2395	\$1695
76CA	\$2695	\$1930

PRICES
F.O.B. FACTORY

KENWOOD Specials

FM "DUAL
BANDER"



2M and
70CM
in a
single
package

**BUY A TW-4000A
FOR \$599.95**

and select two of the following
items absolutely free!

- 1) VS-1 Voice Synthesizer.
\$39.95 value
- 2) TU-4C sub-audible
tone generator. \$39.95 value
- 3) MA-400A Duo-band
Mobile Antenna. \$44.95 value

**BIG
4**

TS-930S



w/ANTENNA TUNER
Plus 3 BONUS ITEMS

- 1) SP-930 SPEAKER
- 2) MC-60A MICROPHONE
- 3) YK-88C-1 FILTER

REG \$2029 VALUE
\$1799 SAVE
\$230.00

CALL FOR
YOUR LOW PRICES

TS-430S TR-7950



NEW ICOM IC-751



**\$1399 PRICE
INCLUDES FREE \$160
PS-35 POWER SUPPLY**

IDEAL PAIR FOR OSCAR 10



2M • 25W • ALL MODE 430-450 MHz • ALL MODE



IC-471A

CALL FOR YOUR SPECIAL PRICE



**W-51
SALE \$799**

**W-36
CALL FOR PRICE**

**LM-470D
CALL FOR PRICE**

KLM

**KT-34A
SALE \$299**

**KT-34XA
SALE \$459**

PRICES ARE FOR CASH
EXCEPT FOR CERTAIN
COMBINATIONS
PLEASE INQUIRE

B-3015

**REG \$239.95
SALE \$199.95**

B-1016 REG \$279.95
SALE \$249.95

B-100 REG \$179.95
SALE \$159.95

B-235 REG \$89.95
SALE \$79.95

B-1010 REG \$319.95
SALE \$289.95

YAESU

**CALL FOR
LOW PRICES**

**ON HAND-
HELD
and all
YAESU
ITEMS**



FT-208R

FT-757GX



NEW!

FREE SHIPMENT

UPS (Surface)
CONT. NENTAL U.S.A.

THE AM. 100% TEL. 100% TEL. 100%
100% TEL. 100% TEL. 100% TEL. 100% TEL.

**FREE
PHONE 800 854-6046**

9:30AM to 5:30PM PACIFIC TIME.

OVER-THE-COUNTER, 10AM to 5:30PM.

MONDAY THROUGH SATURDAY

**ANAHIM, CA 92801
2620 W. La Palma
(714) 761-3033 (213) 860-2040**

BETWEEN 11TH AND 84TH BUSES, FAIR

BURLINGAME, CA 94010

**999 Hubbard Ave. (415) 242-5757
5 MILES SOUTH ON 101 FROM S.F. AIRPORT**

OAKLAND, CA 94609

**2811 Telegraph Ave. (415) 451-5757
May 24 Downtown, Left 21st off ramp**

SAN DIEGO, CA 92123

**5375 Kearny Villa Road (619) 560-4900
May 16-18, Convention Mesa Blvd.**

VAN NUYS, CA 91401

**6265 Sepulveda Blvd. (213) 868-2212
San Diego Fair at Victoria Blvd.**

**HAM
RADIO
OUTLET**



Allen, Jim KA6ZCU
973 Stony Hill Rd., Redwood City, CA
94061

Allen, Kenneth WB6BCV
3784 Grove Ave., Palo Alto, CA 94303

Anderson, Bill KD6DI
323 Torino #8, San Carlos, CA 94070

Battelle, Bard KD6QZ
190 Golden Oak Dr., Portola Valley, CA
94025

Bhaisa, Farokh
22880 Cricket Hill Rd., Cupertino, CA
95014

Bolton, Arthur Jr. NM6K
1161 Bay Laurel Dr., Menlo Park, CA 94025

Brandon, Charles K4KYU 328-6041
1165 Bay Laurel Dr., Menlo Park, CA 94025

Buonocore, John KD6ZL 366-1658
112 Oakwood Dr., Redwood City, CA 94061

Callander, George WA6SZX 854-1752
51 Primrose Way, Palo Alto, CA 94303

Camp, Edwin K. 854-5640
1161 Cloud Ave., Menlo Park, CA 94025

Canham, Fred K6YT 948-9238
691 Casita Way, Los Altos, CA 94022

Cary, Charles N6GEP 323-6401
940 Arbcir Rd. #C, Menlo Park, CA 94025

Chalmers, Doug WA6DMK
450 Adobe Pl., Palo Alto, CA 94306

Chan, Loren WA6ENC 408 629-1852
6182 Ocho Rios Dr., San Jose, CA 95123

Chandler, Frank WB6QPV 322-7678
1040 Menlo Oaks Dr., Menlo Park, CA 94025

Christopherson, G. K6MTZ
728 Panchita Way, Los Altos, CA 94022

Clark, Vernon WA6OHQ
1033 N. California Ave., Palo Alto, CA
94303

Croft, William KD6RG
327 Waverley St., Menlo Park, CA 94025

Daniel, Dave	KB6WP	325-3347
240 University Dr., Menlo Park, CA 94025		
Dorrance, Dave	WA6YSO	
1216 Fernside, Redwood City, CA 94061		
Doster, Landry	K6MPN	368-8156
966 Glennan Dr., Redwood City, CA 94061		
Dueker, Ken		322-6984
37 Ringwood Ave., Atherton, CA 94025		
Dwelley, Dale	W6STY	325-5240
45 Lorelei Lane, Menlo Park, CA 94025		
Dwight, Kenneth	WA6NYB	856-0727
2371 Carmel Dr., Palo Alto, CA 94303		
Edberg, Eric	W6DU	948-1748
461 Heather Court, Los Altos, CA 94022		
Fairbanks, Ed	W6AIN	322-0319
1049 Sonoma Ave., Menlo Park, CA 94025		
Feiler, Kurt	KA6KYU	365-2857
2763 Marlborough Ave., Redwood City, CA		
94061		
Ferranti, Rick	WA6NCX	617 646-6343
116 Franklin St., Arlington, MA 02174		
Finkbeiner, Dick	W6AQL	961-6655
267 Bonny St., Mountain View, CA 94040		
Frye, Bill		326-2610
536 Lincoln Ave., Palo Alto, CA 94301		
Gordano, John	K6JJU	368-0483
1731 The Alameda, Redwood City, CA 94061		
Griffith, Bill	WB6HWZ	322-4551
156 Burns Ave., Atherton, CA 94025		
Harper, David	WB6JFH	509 276-8351
Route 1 Box 446A, Deer Park, WA 99006		
Hausafus, Ed	WA6FSQ	366-5640
467 Encina Ave., Atherton, CA 94025		
Hinnrichs, Scott	W6HRN	329-8841
1530 San Antonio St.		329-0688
Menlo Park, CA 94025		
Ice, George E.	K6CMT	593-0661
855 Somerset Court, San Carlos, CA 94070		
Jenson, Alan	W6UVP	
2520 S. Laurel St., Port Angeles, WA		

98362		
Katz, Nolan	KB6LI	366-7286
1030 Silverhill Rd., Redwood City, CA		
94061		
Keely, Clif	KA6JWA	364-4968
766 Canyon Rd., Redwood City, CA	94062	
King, William Jr.	N6CHI	595-0258
875 Sunset Dr., San Carlos, CA	94070	
Korsack, Andy	VE3FZK	366-5228
504 Lakemead Way, Redwood City, CA	94062	
Krawetz, Howard M.	N6HM	739-7936
654 Barnsley Way, Sunnyvale, CA	94087	
Lapp, Kevin	WA6FHC	364-2654
1096 Connecticut Dr., Redwood City, CA		
94061		
Larson, Alan	WA6AZP	326-6430
700 Arbor Rd. #3, Menlo Park, CA	94025	
Lazier, John	W6HBJ	326-0594
950 Blair Court, Palo Alto, CA	94303	
Learned, Jim		
742 Crompton Rd., Redwood City, CA	94061	
Lile, Irene	WB6RAF	851-7473
154 Wayside Rd., Portola Valley, CA	94025	
Lile, Shannon	K6TNY	851-7473
154 Wayside Rd., Portola Valley, CA	94025	
Littsell, George	W6ABU	
3811 Autumn Dr., Redwood City, CA	94061	
Maciejowski, Tony	WA6KJJ	739-1145
734 Ashbourne Dr., Sunnyvale, CA	94087	
Makler, Harry	KX6C	
4206 Darlington Court, Palo Alto, CA		
94306		
Manders, Ken	WB6CNI	366-7389
11 Michael Court, San Carlos, CA	94070	
Martin, Hank	W6UCE	493-9046
3283 Kipling St., Palo Alto, CA	94306	
McCollum, Sid	WA6RBC	321-6868
330 Sherwood Way, Menlo Park, CA	94025	
McDermott, Charles	KA6NDX	941-6556
349 San Luis Ave., Los Altos, CA	94022	

McElhinney, Bill	KA6LZI	325-9808
666 Tennyson Ave.,	Palo Alto, CA 94301	
McEnnerney, Jack	W6LII	591-8526
73 #nseñada Rd.,	San Carlos, CA 94070	
Morton, Bob	WA6SOI	
748 San Jude Ave.,	Palo Alto, CA 94306	
Murphy, William	W1YC	
2005 Colony St. #11,	Mountain View, CA	
94043		
Nixon, George	GI3OEN	854-6445
1140 Sherman Ave.,	Menlo Park, CA 94025	
Olson, Les	W6CBI	
2125 Jardin Dr.,	Mountain View, CA 94040	
Panton, Ron	W6VG	
5 Cedar Court,	Menlo Park, CA 94025	
Porter, Wallace	K6URO	494-7038
3328 Kenneth Dr.,	Palo Alto, CA 94303	
Reitz, Leonard	NR6X	364-3022
1903 East Bayshore,	Redwood City, CA	
94063		
Root, Eugene	WB6000	323-2666
1340 Hillview Dr.,	Menlo Park, CA 94025	
Russell, Al	W6TFT	
2505 Hopkins Ave.,	Redwood City, CA 94062	
Ryan, Ralph	WB6NNL	325-2213
1555 Middle Ave.,	Menlo Park, CA 94025	
Schooler, William	NO6P	325-1352
352 Bay Rd.,	Atherton, CA 94025	
Schumacher, Len	WA6HLE	591-4385
902 Avon, Belmont,	CA 94002	
Schutzer, Mark	KA6RMA	366-2950
2126 Hillcrest Rd.,	Redwood City, CA	
94062		
Shovlin, Jim	W6WQX	
273 Catalpa Dr.,	Atherton, CA 94025	
Smith, Dan	N6URT	325-9995
2001 Valpariso Ave.,	Menlo Park, CA 94025	
Smith, Ron	K6GZA	
P.O. Box 58,	Moss Beach, CA 94038	

Spear, Greg

KA6NSA

Starkey, Jerry	WA6LIJ	964-6584
736 Filip Rd., Los Altos, CA 94022		
Stein, Seymour (Sy)	WA6ROM	967-0362
13080 Lorene Court, Mountain View, CA		
94040		
Stiebel, Rich	W6APZ	494-0122
840 Talisman Dr., Palo Alto, CA 94303		
Streib, Fred	W6NA	326-7846
736 Garland Dr., Palo Alto, CA 94303		
Stuntz, Steven	K6FS	322-4952
164 Oak Court, Menlo Park, CA 94025		
Swenson, Lloyd	N6CHL	368-8503
73 Adam Way, Atherton, CA 94025		
Tallmon, Bill	W6DVB	326-0112
355 Santa Margarita Ave., Menlo Park, CA		
94025		
Thomas, Ken	K6GDH	326-7701
628 Greer Lane, Palo Alto, CA 94303		
Tiffany, Willard	W6GNX	324-4524
880 Coleman Ave., Menlo Park, CA 94025		
Topp, Don	W6CFZ	858-0225
1092 Metro Circle, Palo Alto, CA 94303		
Towle, Stanley	WA6ZGI	
P.O. Box 2754, Menlo Park, CA 94025		
Tucker, Gerald	WA6LNV	326-4908
1112 Ramona St., Palo Alto, CA 94301		
Winter, Patricia	N6BIS	
P.O. Box 537, Menlo Park, CA 94025		
Yelton, Perry	KD6ID	366-9481
3401 East Bayshore Rd., Redwood City, CA		
94063		
Zobel, Jerome	W6ARA	322-0063
877 Northhampton Dr., Palo Alto, CA 94303		

W6	ABU	Littsell, George
W6	AIN	Fairbanks, Ed
W6	APZ	Stiebel, Rich

W6	AQL	Finkbeiner, Dick
W6	ARA	Zobel, Jerome
WA6	AZP	Larsen, Alan
WB6	BCV	Allen, Kenneth
N6	BIS	Winter, Patricia
KX6	C	Makler, Harry
W6	CBI	Olson, Les
W6	CFZ	Topp, Don
N6	CHI	King, William Jr.
N6	CHL	Swenson, Lloyd
K6	CMT	Ice, George E.
WB6	CNI	Manders, Ken
KD6	DI	Anderson, Bill
WA6	DMK	Chalmers, Doug
W6	DU	Edberg, Eric
W6	DVB	Tallmon, Bill
K6	EHS	Anderson, Andy
WA6	ENC	Chan, Loren
WA6	FHC	Lapp, Kevin
K6	FS	Stuntz, Steven
WA6	FSQ	Hausafus, Ed
VE2	FZK	Krsak, Andy
K6	GDH	Thomas, Ken
N6	GEP	Cary, Charles
W6	GNX	Tiffany, Willard
K6	GZA	Smith, Ron
W6	HBJ	Lazier, John
WA6	HLE	Schumacher, Len
N6	HM	Krawetz, Howard M.
W6	HRN	Hinnrichs, Scott
WB6	HWZ	Griffith, Bill
KD6	ID	Yelton, Perry
WB6	JFH	Harper, David
K6	JJU	Gordano, John
KA6	JWA	Keely, Clif
NM6	K	Bolton, Arthur Jr.
WA6	KJJ	Maciejowski, Tony
K4	KYU	Brandon, Charles
KA6	KYU	Feiler, Kurt
KB6	LI	Katz, Nolan

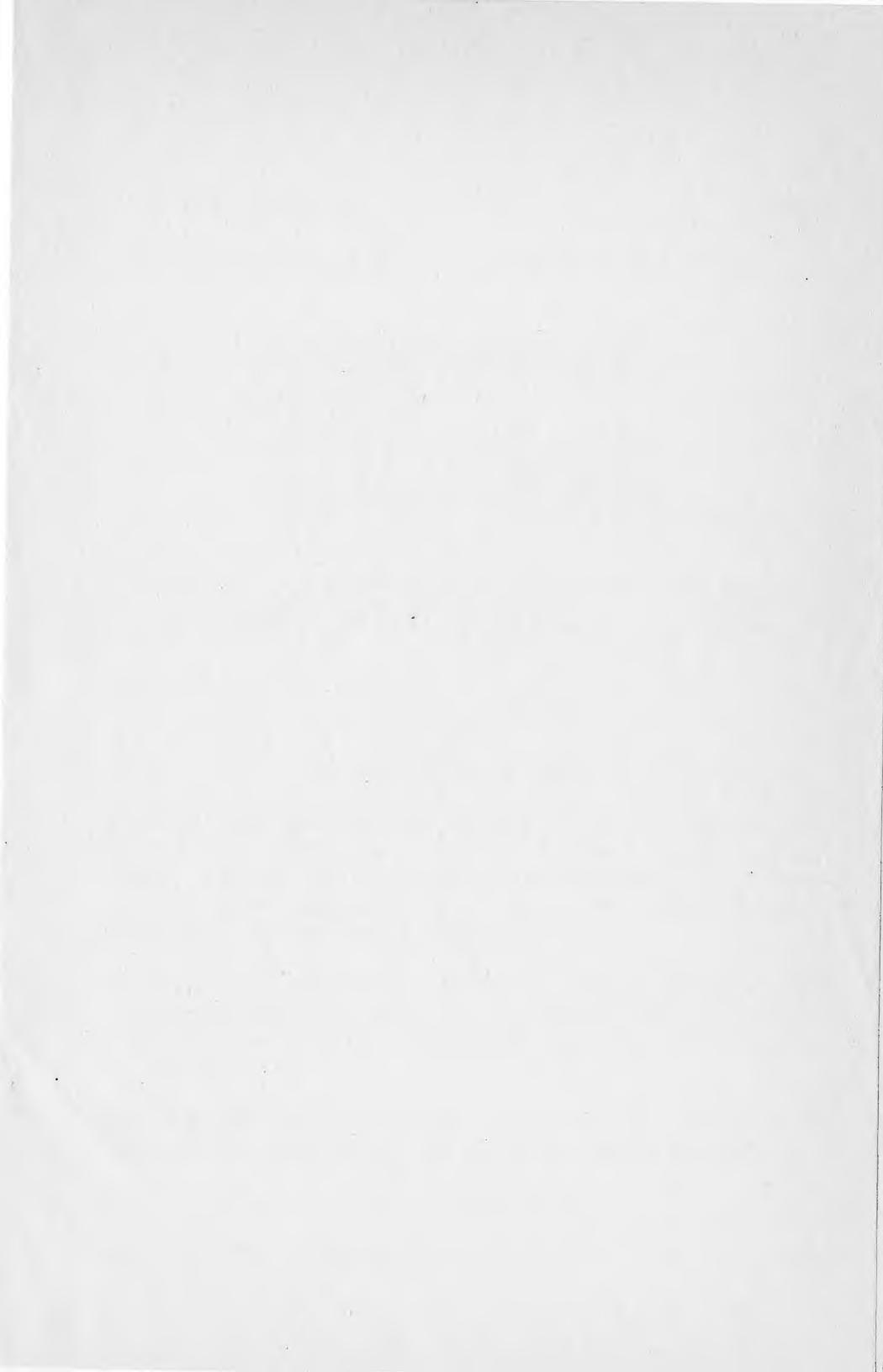
W6	LII	McEnnerney, Jack
WA6	LIJ	Starkey, Jerry
WA6	LNV	Tucker, Gerry
KA6	LZI	McElhinney, Bill
K6	MPN	Doster, Landry
K6	MTZ	Christopherson, G.
W6	NA	Streib, Fred
WA6	NCX	Ferranti, Rick
KA6	NDX	McDermott, Charles
WB6	NNL	Ryan, Ralph
KA6	NSA	Spear, Greg
WA6	NYB	Dwight, Kenneth
GI3	OEN	Nixon, George
WA6	OHQ	Clark, Vernon
WB6	OOO	Root, Eugene
NU6	P	Schooler, William
WB6	QPV	Chandler, Frank
KD6	QZ	Battelle, Bard
WB6	RAF	Lile, Irene
WA6	RBC	McCollum, Sid
KD6	RG	Croft, William
KA6	RMA	Schutzer, Mark
WA6	ROM	Stein, Seymour
W6	RVS	Adachi, Dick
WA6	SOI	Merton, Bob
W6	STY	Dwolley, Dale
WA6	SZX	Callander, George
W6	TFT	Russell, Al
K6	TNY	Lile, Shannon
W6	UCE	Martin, Hank
K6	URO	Porter, Wallace
N6	URT	Smith, Dan
W6	UVP	Jenson, Alan
W6	VG	Panton, Ron
KB6	WF	Daniel, Dave
W6	WQX	Shovlin, Jim
NR6	X	Reitz, Leonard
W1	YC	Murphy, William
WA6	YSO	Dorrance, Dave
K6	YT	Canham, Fred

-33-

KA6	ZCU	Allen, Jim
WA6	ZGI	Towle, Stanley
KD6	ZL	Buonocore, John









Quement offers

The Pro-Mark™ KWM-380

Special!



COLLINS SUGGESTED PRICE IS \$4996.00

NOW

\$2995.00

OUR SPECIAL PRICE INCLUDES: ALL SERVICE BULLETINS
INSTALLED, INCLUDING WARC BANDS.
MANY OPTIONS ALSO AVAILABLE
CALL FOR MORE COMPLETE DETAILS
ON THIS SPECIAL OFFER!



**Rockwell
International**



QUEMENT ELECTRONICS

1000 SO. BASCOM AVE.
SAN JOSE
Phone 998-5900



MasterCard



RETURN REQUESTED:
PAARA P.O. BOX 911
MENLO PARK, CA. 94026

U.S. POSTAGE PAID
PERMIT NO. 320
MENLO PARK, CA. 940256